

Exhibit D

IP- Based Interactive Communication

Glossary of Terms

1. IP = Internet Protocol, the basic standard for Internet communications.
2. Interactive television (ITV) = refers to courses delivered point to point, or point to multi-point, through two-way, compressed video. ITV communications are synchronous, where the student and teacher are separated only by space.
3. Videoconferencing = communication via video in real time with two or more people at different locations.
4. Peer-to-peer videoconferencing = A subset of videoconferencing, using inexpensive technologies to collaborate using interactive video between two or more participants, usually not involving a third party to facilitate or bridge the connections. Normally used on an ad hoc basis, and between individuals or very small groups of people. These connections usually do not exhibit the characteristics associated with high quality videoconferencing.
5. Desktop videoconferencing = a real time video session between two or more users or between two or more locations, typically using ordinary office or home computers equipped for sound and/or video communication.
6. Streaming media = multimedia that is continuously received by, and normally displayed to, the end-user while it is being delivered by the provider. Media files that are not “streamed” must be completely downloaded to the user’s computer before they begin playing.
7. VoIP, V/IP = Voice over IP, voice communications transmitted over the Internet.
8. Video broadcast and on-demand = A video broadcast is a video transmission intended for consumption by a wide audience at the same time, and on multiple receiving devices. The designation of “on-demand” implies that a requestor (or facilitator) can initiate the video broadcast at a time of their choosing rather than be dependent on a schedule determined by others.
9. Internet2 = a U. S. nationwide networking environment with global partnerships, helping universities, companies, and government laboratories develop advanced Internet technologies such as telemedicine, digital libraries and virtual laboratories. Merger negotiations between Internet2 and National Lambda Rail (the other national super-high-speed network) stalled in 2006 but are again making progress, as of September 2007.

10. National Lambda Rail = a consortium of U. S. research universities, government entities and communication network providers, creating high-speed channels for collaborative research and massive data distribution. Merger negotiations between NLR and Internet2 (the other national super-high-speed network) stalled in 2006 but are again making progress, as of September 2007.
11. Single sign on = a network authentication scheme that permits a user to enter an account name and password one time in order to access multiple applications during a single session.
12. Metadata = data that is used to describe other data. Data definitions are sometimes referred to as metadata. Examples of metadata include schemata, tables, indexes, views, column definitions, and source citations.
13. Learning Object Repository = Learning Objects are “modules,” “unit studies,” “tutorials,” “models,” “demonstrations,” etc., made available by their authors for sharing with other educators, typically through a networked repository. Teachers in various locations are able to retrieve and reuse these relatively small units of educational information and incorporate them in customized lesson plans to facilitate learning.
14. Logical Resource Management = A set of policies that govern the utilization of resources and thereby ensure the availability of those resources to the widest possible group when needed.
15. Podcasting = a portmanteau of Apple's "iPod" and "broadcasting", podcasting is a method of publishing files to the Internet, allowing users to choose to download the files or to subscribe to an automatic “feed” for updates. Subscriptions for non-commercial podcasts usually are free to the user. The podcasted files are playable on computers as well as handheld media devices. Podcasting began in 2004 primarily as an audio medium, with rapid expansion into video formats.
16. Synchronous = A type of two-way communication with virtually no time delay, allowing participants to respond in real time. Also, a system in which regularly occurring events in timed intervals are kept in step using some form of electronic clocking mechanism.
17. Asynchronous = A type of two-way communication that occurs with a time delay, allowing participants to respond at their own convenience. Literally not synchronous, in other words, not at the same time. Example of an application of asynchronous communication is electronic bulletin board.
18. Social Networking = There are hundreds of Social Networking Sites — places on the Internet where people meet in cyberspace to chat, socialize, debate, and

network. Some examples include MySpace, Friendster, and Facebook. Regardless of the language, culture, or the nation where the Social Networking Site originates, all of them share the same feature of helping people connect with others who have similar interests.

19. Second Life = Second Life is an open-ended virtual world created by San Francisco-based Linden Lab. Participants in Second Life control onscreen characters (known as avatars) who interact with each other and with their environment in programmable and highly customizable ways. Such virtual worlds provide rich contexts for creative imagination, socialization and experiential learning.
20. QoS = Quality of Service, indicators or targets by which data transmission rates, error rates, and other characteristics can be measured or improved.
21. Multicast = A multicast message is one that is transmitted to selected multiple recipients who have joined the appropriate multicast group. The sender has to generate only a single data stream. A multicast-enabled router will forward a multicast to a particular network only if there are multicast receivers on that network. Other stations filter out multicast packets at the hardware level (e.g., Ethernet or Token Ring network topology).
22. UDP = User Datagram Protocol transports data as a connectionless protocol, using packet switching. This protocol does not guarantee sequence, error checking, or delivery. While it may be considered unreliable, it is useful because it has a low overhead in terms of the demands it places on networks to transport it.
23. Bandwidth = A measure of the capacity of a communications channel. The higher a channel's bandwidth, the more information it can carry.
24. COT = (Kentucky) Commonwealth Office of Technology
25. MCU = Multipoint control unit, a device that distributes a shared connection among 3 or more communication partners
26. CVCN = Commonwealth Video Conferencing Network
27. KTHN = Kentucky TeleHealth Network
28. RON = Regional Optical Network, a category for multistate optical fiber networks
29. H.261, H.262, H.320, H.323 = A set of standards for collaborative conferencing. H.320 and H.323 are engineering protocols for devices to make successful connections to each other, while H.261 (lower quality) and H.262 (high quality)

refer to the methods by which large volumes of data are compressed for faster transmission between the devices.

30. SIP = Session Initiation Protocol. This refers to the engineering standards which allow various devices to connect and disconnect from each other using Internet communications.
31. PBX = Private Branch eXchange, a telephone system that redistributes several trunk lines to a large number of endpoints.
32. PSTN = Public Switched Telephone Network, the familiar telephone network that is ubiquitous in most of the world.
33. KIH, KIH2 = Kentucky Information Highway and Highway 2, names given to 2 of the component projects serving P-12 today (there are others) leading to the current iteration of education networks in Kentucky. With the seamless peering to the Kentucky Postsecondary Education Network (KPEN) the three networks are collectively referred to today as the Kentucky Education Network.
34. P-12 = Preschool through High School; the designation P-20 includes college and graduate education.
35. KEN = Kentucky Education Network , a seamless education-centric network that will grow and scale to meet new, increasing, and unforeseen needs to support equitable life long learning for all Kentuckians. This network is meant to break down the physical and political barriers between secondary and postsecondary education and to share learning content and resources throughout P-21 both virtual and physical.
36. KPEN = Kentucky Postsecondary Education Network, the statewide network that currently provides network services for higher education in Kentucky.